

**Comments of Natural Resources Defense Council
On the Implementation of Section 9006 of the Food Security and Rural Investment
Act of 2002**

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Natural Resources Defense Council appreciates the opportunity to comment on the implementation of Section 9006 of the Farm Security and Rural Investment Act of 2002. NRDC is a non-profit environmental group with over 500,000 members nationwide. We have been actively involved in promoting clean energy at the federal, state and local level for over 30 years, and worked closely with several organizations to develop and ensure passage of the Energy Title of the Farm Bill. The programs supported by Section 9006 can help farmers improve energy efficiency and invest in clean energy technologies while delivering substantial environmental, economic and security benefits to the nation. We strongly support USDA's efforts in this regard.

Promoting energy efficiency and renewable energy in the agricultural sector is the most cost-effective way to reduce the environmental and public health impacts of energy use, including smog, acid rain and climate change. Investing in clean energy technologies is also the best thing we can do to lower energy bills for farmers and ranchers and insulate them from energy price spikes that occur at times of peak demand or as a result of fluctuations in the prices of fossil fuels, while at the same time improving the overall reliability of the electric system and promoting rural economic development. The security benefits of reducing our dependence on oil and promoting clean distributed generation such as solar panels, fuel cells and wind turbines are potentially enormous.

Of course, the size of these benefits depends in no small part on the design of the programs, how well they leverage private investment, address local concerns and build on lessons learned. Experience at the state level indicates that, at a minimum, clean energy programs supported under Section 9006 should deliver the benefits set forth in Table 1.

Table 1. Environmental and Economic Benefits of Clean Energy Investments

Each \$1 million investment results in over \$3 million in direct and indirect benefits	Annual Benefits of \$ \$23 million/year investment
4.6 million kWh saved	106 million kWh saved
\$600,000 energy bill reductions	\$13.8 million energy bill reductions
630 MWh clean energy generation	14,490 MWh clean energy generation
11.5 jobs created/ sustained	265 jobs created/ sustained

Based on calculations from New York Energy Smart Program Evaluation and Status Report, January 2002.

Program Priorities and Eligible Technologies

The Rural Business-Cooperative Service should design and/or support programs that (i) maximize the number of MW/MWh avoided or installed per dollar spent; (ii) drive investment in

emerging technologies; (iii) overcome market barriers to commercializing clean energy technologies (i.e., market transformation); and (iv) identify the best options for long-term deployment of efficiency and renewables in the agricultural sector. Fortunately, there is no need to start from scratch in determining how to leverage these funds to greatest effect; there is a wealth of experience at the state and local level upon which to build. Vermont, New Jersey, New York and California all provide excellent models of “market transformation” programs that are designed to achieve these goals. A recent survey by ACEEE (available at www.aceee.org/industry/agriculture.htm) identifies 34 projects nationwide that are potential building blocks for a clean energy market transformation initiative directed at the agricultural sector.

Market Transformation. One of the most important lessons from state work is that financial incentives alone are often insufficient to commercialize new clean energy technologies. High efficiency technologies in particular often make economic sense, but farmers, ranchers and small businesses do not invest in them due to a variety of market barriers, including:

- High first cost – even if a clean energy technology pays for itself over a moderate period of time, many small businesses do not have access to capital to cover high first costs, or are unfamiliar with the technology’s potential to deliver substantial cost savings over the life of the product;
- Lack of consumer awareness – many small businesses are unfamiliar with new technologies and how favorably they compare to traditional technologies in terms of performance and durability;
- Lack of market infrastructure – many clean energy technologies are not readily available; retailers and distributors are often unfamiliar with the technologies’ benefits and fail to market them effectively or provide access to attractive financing; many clean generation technologies also lack an appropriate field of trained installers and many utilities have cumbersome interconnection requirements – all of these factors create high transaction costs for consumers.

It is essential to design programs to overcome these barriers by intervening in the market with carefully selected strategies, including broad-based and targeted marketing, financing development, infrastructure development (including promoting streamlined interconnection standards), business development assistance, training and technical assistance, vendor linkages and direct financial incentives. Specifically, programs should be designed to:

- Increase awareness and market demand for high efficiency products and equipment and clean energy generation systems;

- Accelerate the development of a vibrant, self-sustaining local infrastructure for the delivery and maintenance of these products, equipment and systems;
- Develop and institutionalize new mechanisms to overcome financial and market barriers; and
- Accelerate a reduction in the cost of products, equipment and systems by reducing transaction costs and increasing demand through rebates and education about reliability and performance.

Indicators of program success include:

- The level of public awareness and knowledge among farmers, ranchers and small business owners about clean energy technologies;
- Market share of high efficiency products and equipment;
- The number and capacity of clean energy generation systems installed;
- The number of firms carrying a wide variety of high efficiency products and equipment;
- The number of firms installing clean energy generation systems;
- The number and variety of clean energy systems readily available; and
- Decreases in the first costs for high efficiency products and equipment and clean energy generation systems.

Energy Audits. One of the most important things that USDA can do to transform energy markets in the agricultural sector is to include funding for Section 9005 in its budget request. The energy efficiency and renewable energy audits that Section 9005 would support would provide essential outreach and targeted market development that will help ensure that Section 9006 funds are spent in the most effective way possible.

Priority Technologies. Energy efficiency programs should target technologies that are responsible for the greatest energy use on farms and ranches, including motors and pumps; buildings; heating, ventilation and air-conditioning (HVAC) equipment; and lighting. Only technologies that are substantially more efficient than industry standard should be eligible for program support.

Clean energy generation programs should target wind, solar, sustainable biomass and fuel cells, while recognizing that these technologies are at different stages of maturity and warrant different types and levels of support. A simple per kilowatt-hour subsidy may be sufficient to drive investment in new wind, while a sustainable biomass facility could require an up-front grant, financing or equity investment. Sound waste management practices

should require methane capture from animal farms; financial support for methane digesters should be limited to the incentive needed to convert captured methane into electricity.

Support for biomass should be limited to sustainable feedstocks, which should specifically exclude municipal solid waste incineration (which contains a substantial amount of inorganic matter and is not properly considered biomass), and forest materials other than pre-commercial thinnings, slash and brush. A proposed definition for eligible biomass feedstocks is attached.

Types of Financial Support and Criteria for Determining the Amount

With the limited amount of funding available under Section 9006, it will be impossible for RBS to provide every type of financial incentive that could effectively transform energy markets in the agricultural sector. RBS should focus its attention on existing programs that could use Section 9006 funds to target markets in the agricultural sector, and a small number of stand alone programs that RBS could administer.

It either case, is essential to design and/or support funding mechanisms that are flexible enough to respond quickly to changes in the marketplace and that, to the greatest extent possible, provide the minimum funding necessary to drive investment in high efficiency technologies and get new clean generation projects off the ground. As markets for renewable technologies develop and market barriers are better understood, program administrators will need to make modifications, re-allocate funds and develop new strategies.

Existing Programs

Some (though not necessarily all) efficiency programs should provide rebates to consumers or to retailers as part of a market transformation initiative. Clean energy generation programs can provide financial incentives in the form of rebates (for smaller systems) or per-kWh subsidies (for larger systems). Detailed descriptions of a wide array of excellent market transformation programs are available at the following websites: www.njcleanenergy.com; www.efficiencyvermont.com; www.nyserda.org. RBS should contact program administrators in these and other states to discuss the potential to expand existing programs to target the agricultural sector. RBS could issue an annual RFP to program administrators to fund such expansions as a way to develop model programs and deliver Section 9006 into the marketplace as soon as possible.

New RBS Programs

New energy efficiency programs should be modeled on the existing market transformation programs noted above, with a separate program for each targeted product. Such programs could include direct rebates to farmers, ranchers and small businesses, or financial incentives to retailers or other market players, depending on the product.

Programs to promote smaller clean electric generation technologies should provide easy access to attractive financing along with rebates that decline over time as the market for each technology develops. For larger systems, auctions, under which funding is awarded to the bidders that require the least funding per kilowatt-hour, are an effective way of minimizing costs. Less mature technologies, such as sustainable biomass, may require grants, equity investment, loans, loan guarantees and interest rate buy-downs. A description of each type of program is provided below.

Buy-down Program. For distributed technologies that are primarily designed to meet electricity demand on-site, financial incentives should take the form of a buy-down program in which the incentive level decreases in phases. In each phase, the incentive level would be capped by both a percent of total installed cost and a dollar of installed cost per watt, as set forth in the table below. Customers would receive the lesser of these two values. The maximum incentive values listed in the following table include direct incentives (which would be capped at 25% under the Act) and the value of low interest loans (in combination with direct incentives, not to exceed 50% of the cost of clean energy investments). As the market transforms, the incentive amount, in total dollars and as percentage of first cost, should decrease and the amount of customer contribution should increase along with the size of the block of customers eligible for that incentive. It may be appropriate to modify these numbers for a particular technology or sub-category of technologies as the market develops. Fuel cells, PV, wind and sustainable biomass should compete equally for the incentives, provided that no single technology receives more than 50% of the funds available for clean energy generation systems.

Table 2. Proposed Rebate Schedule for Clean Energy Generation Systems

Customer-sited Clean Energy Program Incentives	Incentive Block		
	<u>1</u> (7.5 MW)	<u>2</u> (12.5 MW)	<u>3</u> (30 MW)
Maximum buy-down per watt of system rated output (including value of financing incentive)			
Small Systems (<10kW)	\$5.00	\$4.00	\$3.00
Medium Systems (>10-100kW)	\$4.00	\$3.00	\$2.00
Larger Systems (>100 kW)	\$3.00	\$2.00	\$1.50
Maximum buy-down as a percentage of eligible system costs (including value of financing incentive)	50%	40%	30%

The key features of this incentive structure are:

- The incentive is a rebate of a portion of the total system cost, including installation and interconnection;
- Incentive funding is divided into 3 blocks with declining rebate amounts;
- Financial incentives are applicable only for new systems that include at least a 5-year all-inclusive warranty (with the exception of fuel cell stacks, for which warranties against normal decline in output should not be required);
- Systems must be installed within 6 months of application approval date for small (<10kW) systems and within 12 months for medium (10 kW or greater) systems; and
- Applicants should be required to permit inspection of eligible systems by program administrators.

Auction Program. The incentive program for large-scale technologies that are designed to export power to the grid should take the form of an auction for a per-kWh subsidy. Developers of such projects would submit bids for the lowest per-kWh subsidy needed over a 5-year period in order to proceed with the project. An auction program administrator would award subsidies to the lowest bidders until renewable projects total a specified size, for example, 150 MW, or until the funds allocated to the auction program are depleted. Bids for subsidies should be capped at \$0.02/kWh. Bidders should be required to provide substantial proof of intent and ability to build the project being bid and should establish clear milestones for each project. Failure to meet milestones should result in loss of subsidies and funds made available through defaulting projects should be re-auctioned.

Emerging Technologies Program. For emerging technologies, such as sustainable biomass, rebates and per-kWh subsidies are unlikely to prompt development of even the most promising projects. In order to attract private financing, project developers may need a combination of grants, equity investment, financing and production subsidies. An Emerging Technologies Program should issue RFPs to potential developers and award financial support to proposals only upon the recommendation of a panel of disinterested clean energy technology experts that the RBS would convene to evaluate proposals and assess

- The potential viability of the project and the technology proposed;
- The importance of demonstrating commercial scale feasibility in order to attract private financing for future projects; and
- The suitability of the project for the selected location and resource base.

Potential Sources of Matching Funds and Opportunities to Leverage Funding

As discussed above, existing state programs, most of which are funded by System Benefit Charges or other utility-based funding mechanisms, provide an excellent opportunity for leveraging the support available through S.9006. These programs have administrators and delivery infrastructure that could serve as a platform for expedited pilot programs, for example, to promote the use of efficient motors in the agricultural sector. The design of these programs also reflects years of experience working with manufacturers, retailers, distributors and customers, which could inform the development of national programs delivered by RBS program administrators. Coordination with regional and national efforts is another excellent way to leverage these dollars. Northeast Energy Efficiency Partnerships and the Consortium for Energy Efficiency are non-profit organizations are two of the most prominent organizations working with states and utilities to maximize the effectiveness of energy efficiency programs.

NRDC believes that it is premature to assess whether future policies to address climate change, including the possible issuance of tradable carbon credits, are potential sources of direct funding to promote clean energy technologies in the agricultural sector. There is no reason to believe that tradable carbon credits issued in the absence of any regulatory requirement to reduce greenhouse gas emissions will have any monetary value or will deliver any environmental benefit. Until climate change policies exist, it is impossible to determine the value of potential credits, or address more complicated issues such as ownership, and we urge RBS to avoid this line of inquiry altogether.